



# SHAPE OF THINGS TO COME

BY INGA HANSEN

Whether they pine for Brad Pitt's six-pack abs, the perfectly contoured curves of Heidi Klum or the smoothing of unsightly cellulite, today's body contouring patients have high expectations when they enter your practice. Fortunately, your ability to meet those expectations is getting easier, thanks to 30-plus years of improving technologies and techniques. From ultrasound-assisted liposuction to laser-assisted cellulite treatments and new high-definition body sculpting techniques, you have more options than ever when it comes to helping clients perfect their physiques.

# Shape

## Body Contouring

Invented in 1974, liposuction remains the most requested cosmetic procedure in the United States. The physical removal of fat allows for dramatic results in both circumference reduction and body contouring. In 1985, Jeffrey Klein, MD, revolutionized the procedure with the tumescent technique in which a mixture of lidocaine, saline and epinephrine is injected to reduce bleeding and minimize nerve and muscle damage while improving the need for general anesthesia.

Today liposuction has taken another leap forward with the addition of ultrasound and laser technologies. “Infusing the tissue with an anesthesia solution prior to removal numbs the area and makes the fat very soft and mushy so it’s easier to suction out through the cannula,” says David E. Bank, MD, director, The Center for Dermatology, Cosmetic & Laser Surgery, Mt. Kisco, New York. “New systems include cannulas that emit either ultrasound waves or laser wavelengths in an attempt to further liquefy fat prior to removal and thus improve outcomes.”

The purported benefits to patients are twofold. When the fat is easier to remove it can be suctioned out with less trauma to surrounding tissues so the patient experiences less postprocedure swelling, bruising and pain. The second benefit is that these technologies help increase skin tightening by maintaining more connective tissue in the area, while the heat stimulates collagen production.

## Ultrasound-Assisted Liposuction

Two of the latest ultrasound-assisted systems include UltraSculpt (Mentor Corporation) and Vaser Lipo System (Sound Surgical Technologies). Both systems use a two-step method in which pulsed ultrasonic waves are delivered through a special cannula to liquefy fat before it’s suctioned out. The benefits include better preservation of surrounding tissues and a smoother end result. While early attempts at ultrasound-assisted liposuction led to side effects such as nerve damage and skin burns, the Vaser, a third-generation lipoplasty device, addressed these concerns by creating a grooved cannula that delivers ultrasonic waves at significantly lower energy levels than earlier systems to loosen and emulsify fat cells. “The nerve plexus, the vascular bed and the connective tissue are left intact so you have dramatically reduced bruising and a faster recovery,” says Dan Goldberger, CEO, Sound Surgical Technologies. “The connective tissue, which remains intact, tightens up to fill in the areas previously filled with fat following the procedure so you also see better skin tightening.”

Stacey Hedlund, MD, of Epiphanea, an affiliate of Face & Body Medical Aesthetics in Oklahoma City uses the Vaser Lipo System for contouring thighs, abdomen, back and arms. “Because the fat is emulsified, the Vaser offers a smoother finished result,” she says. “You don’t get the tracks or dimpling that you sometimes see with traditional liposuction, and the heat



Marc Winter, MD, noted these results after using the VelaShape on two different patients.

Photo courtesy Marc Winter, MD

stimulates collagen production so you get quite a bit of skin tightening as well.”

Dr. Hedlund gives patients a mild sedative during the procedure and reports that most of her patients are back at work within three days.

“The amount of fat we can remove is dependent on the amount of lidocaine we can use, which is based on the patient’s body weight,” says Dr. Hedlund. “If you have a fairly large patient who wants to come down multiple sizes, you can perform the procedure in stages by doing multiple treatments spaced at least two months apart.”

## Laser-Assisted Liposuction

The SmartLipo (Cynosure), the Pro-Lipo (Sciton) and the Syneron LipoLite use small cannulas, between 1mm and 2mm, with a 1064nm laser fiber to melt fat prior to suction. CoolTouch has adapted its 1320nm CoolTouch laser to deliver CoolLipo. “The advantage of adding the laser is that you disrupt the fat prior to removal for more even suctioning and less contouring irregularities,” says Charles Mok, MD, Allure Medical Spa, Shelby Township, Michigan. “You also get more skin tightening, so the areas most commonly treated with the CoolLipo are the ones where we’re most concerned with skin retraction—the neck, the chin and the upper arms.”

The SmartLipo with its smaller cannulas is also a popular choice for the chin, neck and upper arm areas. “The Vaser Lipo System is for patients who have higher BMIs and want a more shapely body, while the SmartLipo can contour smaller areas for patients who are in relatively good shape,” says Jeffrey Adelglass, MD, The Skintastic Medical & Surgical Rejuvenation Center, Plano, Texas.

The added heat of the laser is leading some physicians to combine ultrasound-assisted and laser-assisted liposuction procedures. “The SmartLipo is a much smaller instrument but it heats to a higher temperature,” says Dr. Hedlund. “So we melt the fat in larger areas with the Vaser and then follow with the SmartLipo to stimulate collagen production right under the skin. This gives you a lot of skin tightening following the liposuction.”

Another option is the SlimLipo (Palomar), which features a unique and patented 924nm wavelength that’s designed for



selective heating and liberating lipids in the tissue while leaving other structures intact.

## Body Sculpting

For patients with good muscle tone and low BMIs, a new procedure known as Vaser-assisted High Definition Liposculpture, or Vaser Hi Def, is gaining in popularity. Built on the Mentz technique used in the 1990s to create washboard abs for body builders, it allows surgeons to sculpt the appearance of muscle into patients who are already shapely.

“High Definition Liposculpture is for patients with good muscle tone and a BMI less than 30,” says Dr. Adelglass. “We use the Vaser to achieve a gym rat body. This is not simple contouring; we sculpt the body to create six-pack abs and muscle definition to match months of gym time.”

According to Alfredo Hoyos, et al. whose work with Vaser Hi Def appeared in the November/December 2007 *Aesthetic Surgery Journal*, the technique is both “more difficult and more time consuming than traditional lipoplasty...requiring selective fat retention and fat removal from both the superficial and deep fat layers to achieve a natural three-dimensional muscular appearance.” The addition of ultrasound technologies has helped improve outcomes, according to Dr. Hoyos. He says, “The Vaser Hi Def allows the fat to be prepared like an artist’s clay through emulsification, so the surgeon can ‘sculpt’ muscle anatomy in great detail through gentle extraction aspirations that minimize the trauma normally associated with traditional lipoplasty.”

Although the procedure is performed with the Vaser, Dr. Adelglass is quick to point out that this is not traditional lipoplasty. “It requires special cannulas, a different technique and a different philosophy,” he says. “It is truly a sculpting of the body.”

Though the addition of laser and ultrasound technologies is helping to improve outcomes in terms of both results and recovery times, the one thing these technologies have not been able to do is increase the number of candidate profiles for liposuction. “These technologies can offer superior results but they do not expand the indications for liposuction among

The SmartLipo's smaller cannula is a popular choice for contouring chins and necks, as seen in these photos.

patients who were not good candidates in the past,” says Dr. Mok. “Patients who are obese require lifestyle changes, not liposuction, and patients with excessively loose skin will still require incisions even with the laser- and ultrasound-assisted systems.” Dr. Mok himself often works with the CombiTuck, a technique that combines liposuction and abdominoplasty. “We liposuction the stomach first and then do an incision and a tummy tuck without cutting the blood vessels or nerves,” he says. “It’s like a face-lift for the abdomen following fat removal.”

Liposuction also remains limited in terms of its ability to improve skin dimpling. “Body contouring options are expanding but these technologies do not address the cellulite that plagues 85% of women,” says Dr. Adelglass.

## Body Smoothing

Like lipoplasty, new systems that reduce the appearance of cellulite and the circumferences of abdomens, thighs and arms are harnessing the powers of heat and light to improve outcomes. Both the VelaShape (Syneron) and the SmoothShapes (Elemé Medical) offer the vacuum and roller massage components of the original Endermologie system but with a few additions. The VelaShape incorporates infrared light and radiofrequency to help shrink fat cells and stimulate collagen production for improved skin smoothing and tightening. Marc Winter, MD, of the Orange Coast Women’s Medical Group in Laguna Hills, California, recently completed “Body After Baby,” a study of 20 postpregnancy women. Dr. Winter performed five VelaShape sessions each, spaced one week apart, on postpregnancy women. He waited at least six weeks after the birth to start the sessions. Patients lost an average of 2.33 inches on the buttocks, 1 inch on the thighs and 2.9 inches on the abdomen.

“I was skeptical at first but every patient saw a reduction of at least one inch or more in the areas we treated,” says Dr. Winter, who identifies two ideal patient groups for the VelaShape system. “One is the patient who is in fairly good shape but has an area or two that she wants to tone and/or decrease the appearance of cellu-

### Resources

#### CoolTouch

877.858.2665

[www.cooltouch.com](http://www.cooltouch.com)

#### Cynosure

978.256.4200

[www.cynosure.com](http://www.cynosure.com)

#### Elemé Medical

877.333.5306

[www.elememedical.com](http://www.elememedical.com)

#### Erchonia Medical

Zerona

888.242.0571

[www.erschonia.com](http://www.erschonia.com)

#### Mentor

800.525.0245

[www.mentorcorp.com](http://www.mentorcorp.com)

#### Palomar SlimLipo

800.725.6627

[www.palomarmedical.com](http://www.palomarmedical.com)

#### Sciton Pro-Lipo

888.646.6999

[www.sciton.com](http://www.sciton.com)

#### Sound Surgical Technologies

888.471.4777

[www.vaser.com](http://www.vaser.com)

#### Syneron

866.259.6661

[www.syneron.com](http://www.syneron.com)

## Shape

lite. The other group includes patients who want to lose more than a couple of inches but need a jump start." According to Dr. Winter, larger patients who experience smoothing and inch loss with the VelaShape often view

it as a springboard to a diet and exercise program.

It's something that Sheri Rowen, MD, experienced firsthand when she introduced SmoothShapes to her patients at the Eye Cosmetic Surgery Center



Charles Mok, MD, captured these results one week after a CoolLipo procedure.



Photo courtesy Charles Mok, MD

in Baltimore, Maryland. "I'd been trying to lose 10 pounds for years, and I've lost 6 pounds since I started undergoing the SmoothShapes myself," she says. "I can definitely see a difference after the sessions; my pants feel looser and it's encouraged me to eat better."

Dr. Rowen, who performs the sessions either twice weekly or once a week depending on patients' schedules, has also seen dramatic results in reducing the appearance of cellulite. The SmoothShapes uses two light sources—a 650nm wavelength and 950nm wavelength—to liquefy lipids and increase the permeability of fat cells. The vacuum improves penetration of the light while rollers help move the liquefied fat into the lymphatic system for drainage. "I have a patient who is not overweight but has quite a bit of cellulite," says Dr. Rowen. "She started to see improvement in her cellulite at about the fifth session and today she's wearing shorts and skirts for the first time in her adult life."

The cellulite and skin smoothing results of VelaShape and SmoothShapes make them a popular adjunct for liposuction as well. "We perform a session within a week of liposuction, and it helps reduce patient discomfort and smooth some of the irregularities that can be seen following liposuction," says Dr. Adelglass.

### On the Horizon

While the gap between the dramatic results of liposuction and the subtler results of noninvasive skin smoothing can be frustrating to patients who want big results with small risks, there is hope on the horizon. Two new systems utilizing ultrasound technologies for noninvasive

## Shape

body contouring are currently in use outside the United States but have not yet gained U.S. Food & Drug Administration approval. The LipoSonix (Medicis) and UltraShape Contour Plus both use high-intensity ultrasound to melt fat in the subcutaneous layer with-

out incisions. They do this through the use of a transducer that emits multiple low-energy ultrasound waves that meet in the subcutaneous layer to destroy fat cells. The body then flushes out the debris. "The biggest issue the FDA would like to see safety data on is what effect

this has on the patient's triglyceride and cholesterol levels?" says Dr. Bank. "When you shatter large amounts of fatty cells but don't physically remove them, like in liposuction, the body absorbs and then excretes them; the question is what happens within the body as a result of this mechanism." The likely answer, according to Dr. Bank, is nothing bad. "There have been no negative reports from countries where these technologies are currently in use," he says. "And I think they will be enormously popular here in the United States because they appear to offer real, noninvasive contouring results."

Double-blind studies on the UltraShape Contour I, the predecessor to the Contour Plus, conducted by Dr. Moreno-Moraga, et al., showed a 100% response rate with a mean reduction in fat thickness of 2.28cm and a mean reduction in circumference of 3.95cm. A six-center study on the Contour Plus commenced in June 2008. Results will be submitted to the FDA as part of the company's submission for premarket approval.

When it comes to meeting patient expectations for body contouring, honesty is the best policy. "You want to under-promise and over-deliver on results," says Dr. Bank, who notes that the best candidates for liposuction and body smoothing are those with well-defined localized areas of fat or cellulite who've been able to maintain their body weight for a significant period of time. "Patients who undergo body treatments, especially liposuction, do lose a significant amount of weight, and it can be an invitation to be less careful with diet and exercise," says Dr. Bank. "There's no physical danger in gaining a little weight but it will reduce the aesthetic of the procedure. The patient needs to understand her role in maintaining the best post-op results." 

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